

CLAIMS

We claim:

1. A method, comprising:
 - receiving a power signal from a power input;
 - receiving a data signal from a data input;
 - receiving a discovery response from a network device; and
 - upon receipt of the discovery response, concurrently transferring the power signal and the data signal on a shared medium to the network device.
2. The method as set forth in claim 1 further comprising the step of modulating the data signal in a manner interoperable with the power signal.
3. The method as set forth in claim 1 further comprising the step of receiving a second data signal.
4. The method as set forth in claim 3 further comprising the step of multiplexing the data signal and the second data signal for transmission on the shared medium.
5. The method as set forth in claim 3 further comprising the step of concurrently transferring the second data signal with the power signal and data signal on the shared medium.
6. The method as set forth in claim 1 further comprising the steps of:
 - receiving an Ethernet data signal;

converting the Ethernet data signal into a bit-stream second data signal;
and
concurrently transferring the second data signal on the shared medium
with the power signal and the data signal.

7. The method as set forth in claim 6 further comprising the step of multiplexing
the data signal and the second data signal for transmission on the shared medium.

8. A method, comprising:

generating a discovery request signal to determine the presence of a
network device capable of accepting power over a network;

receiving a discovery response signal from the network device;

receiving a data signal from a data input;

receiving a power signal from a power input;

transferring the data signal to the network device; and

upon receipt of the discovery response signal, transferring power to the
network device.

9. The method as set forth in claim 8 further comprising the steps of:

receiving an Ethernet data signal from an Ethernet input;

converting the Ethernet data signal into a second data signal; and

concurrently transferring the second data signal to the network device.

10. An apparatus for concurrently transmitting power and data signals to a
network device on a shared medium, comprising:

a power input for admitting the power signal into the apparatus;
a data input for admitting the data signal into the apparatus; and
means for modulating the data signal with the power signal where the
data signal and the power signal are simultaneously transmitted on the shared
medium.

11. The apparatus set forth in claim 10 wherein the means for modulating is a
frequency shift keying scheme.

12. The apparatus set forth in claim 10 wherein the data is serial control data.

13. The apparatus set forth in claim 10 wherein the data is Ethernet data and
further including means to convert the Ethernet data to serial bit-stream data.

14. The apparatus set forth in claim 13 wherein the means to convert is a micro
terminal server.

15. The apparatus as set forth in claim 10 further comprising:

a second data input for admitting a second data signal into the
apparatus;

a multiplexer to combine the data signal and second data signal for
transmission on the shared medium; and

means for modulating the second data signal with the data signal and
the power signal where the data signal, second data signal and the power signal are
simultaneously transmitted on the shared medium.

16. The apparatus set forth in claim 15 wherein the means for modulating is a modem.
17. The apparatus of claim 10 wherein the power signal is sourced from a DC power source.
18. The apparatus of claim 10 wherein the data input comprises an RJ-45 jack, wherein the RJ-45 jack connects the data input to a network.
19. The apparatus of claim 18 wherein the RJ-45 jack further includes any necessary transformers for impedance matching, isolation, and noise rejection.
20. The apparatus set forth in claim 10 further including sensing circuits which detect whether the network device connected to the network port requires power.
21. The apparatus of claim 20 wherein the sensing circuits require power and wherein the sensing circuits couple power and data signals and transmit them to the network device on the shared medium.
22. The apparatus of claim 20 wherein the sensing circuits detect that the network device does not require power and wherein the sensing circuits allow for passive transmission of data signals only.

23. A apparatus for concurrently providing power and data signals to at least one network device, comprising:

means adapted for supplying power for internal circuitry via power signals produced by a power supply;

means adapted for receiving data signals for the device;

means adapted for coupling the power signals to the data signals on a shared medium; and

means adapted for concurrently transmitting the coupled signals to at least one network port via the shared medium;

wherein the network device receives both data and power signals from the network port.

24. The apparatus of claim 23 wherein the data input includes an RJ-45 jack for supplying data signals to the apparatus.

25. The apparatus of claim 24 further comprising means for detecting the presence of the at least one network device.